

U.S. Patent Application Serial No. 09/988,252  
Response dated June 21, 2004  
Reply to OA of January 23, 2004

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claim 1 (Currently Amended):** A method of forming a conductive pattern, comprising the steps of:

(1a) applying a positive thermosensitive paste composition containing a conductive powder and a heat-fusible inorganic powder to a substrate, followed by drying, to form a positive thermosensitive coating;

(2a) irradiating the coating directly with an infrared laser beam so as to obtain a desired pattern; [[and]]

(3a) removing the irradiated part of the coating by development to form a conductive pattern coating; and

(4a) calcining the conductive pattern coating.

**Claims 2-5 (Canceled)**

**Claim 6 (Currently Amended):** A method according to Claim [[5]] 1, wherein the heat-fusible inorganic powder is a glass frit.

**Claim 7 (Currently Amended):** A method of forming a conductive pattern, comprising the steps of:

(1b) applying a positive thermosensitive paste composition containing a conductive powder and a heat-fusible inorganic powder to a surface of release film, followed by drying, to form a dry film having a positive thermosensitive layer;

(2b) superimposing the dry film onto a substrate in such a manner that the surface of the positive thermosensitive layer is in contact with the substrate, to form a positive thermosensitive coating, and then peeling off the release film;

(3b) irradiating the coating directly with infrared laser beam so as to obtain a desired pattern; [[and]]

(4b) removing the irradiated part of the coating by development to form a conductive pattern coating; and

(5b) calcining the conductive pattern coating.

**Claims 8-11 (Canceled)**

**Claim 12 (Currently Amended):** A method according to Claim [[11]] 7, wherein the heat-fusible inorganic powder is a glass frit.

**Claim 13 (Currently Amended):** A method of forming a conductive pattern, comprising the steps of:

(1c) applying a positive thermosensitive paste composition containing a conductive powder and a heat-fusible inorganic powder to a surface of release film, followed by drying, to form a dry film having a positive thermosensitive layer;

(2c) superimposing the dry film onto a substrate in such a manner that the surface of the positive, energy-sensitive layer is in contact with the substrate, to form a positive thermosensitive coating;

(3c) irradiating the coating through the release film with an infrared laser beam so as to obtain a desired pattern; [[and]]

(4c) peeling off the release film, and removing the irradiated part of the coating by development to form a conductive pattern coating; and

(5c) calcining the conductive pattern coating.

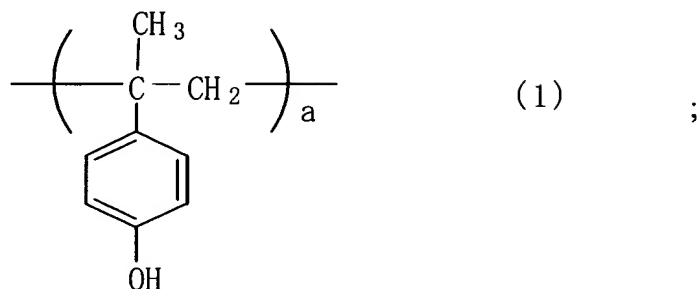
**Claims 14-17 (Canceled)**

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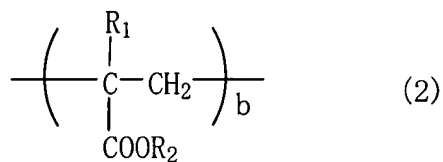
**Claim 18 (Currently Amended):** A method according to Claim ~~[[17]]~~ 13, wherein the heat-fusible inorganic powder is a glass frit.

**Claim 19 (Previously Presented):** A method according to Claim 1, wherein the positive thermosensitive paste composition comprises a thermosensitive resin, an ether linkage-containing olefinic unsaturated compound, a thermal acid generator and a conductive powder, the thermosensitive resin being a copolymer having:

a structural unit represented by Formula (1)



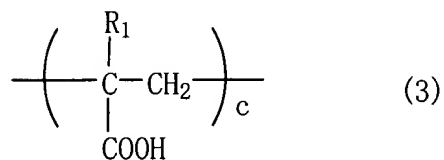
a structural unit represented by Formula (2)



wherein  $\text{R}_1$  is hydrogen or methyl,  $\text{R}_2$  is  $\text{C}_1$  to  $\text{C}_6$  linear or branched unsubstituted alkyl or  $\text{C}_1$  to  $\text{C}_6$

linear or branched substituted alkyl; and

a structural unit represented by Formula (3)

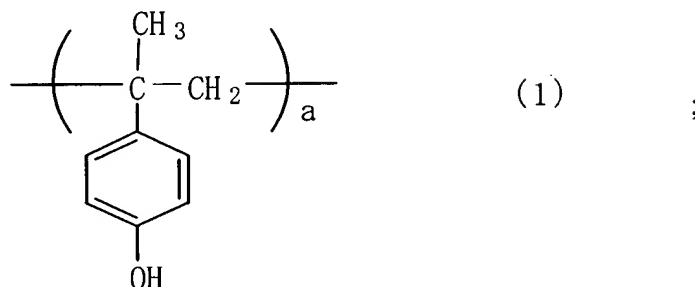


wherein  $\text{R}_1$  is hydrogen or methyl;

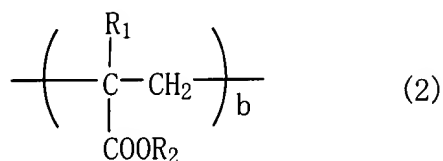
the molar proportions of the structural units being  $a=0.05$  to  $0.7$ ,  $b=0.15$  to  $0.8$  and  $c=0.01$  to  $0.5$  and the sum of  $a$ ,  $b$  and  $c$  being  $1$ .

**Claim 20 (Previously Presented):** A method according to Claim 7, wherein the positive thermosensitive paste composition comprises a thermosensitive resin, an ether linkage-containing olefinic unsaturated compound, a thermal acid generator and a conductive powder, the thermosensitive resin being a copolymer having:

a structural unit represented by Formula (1)

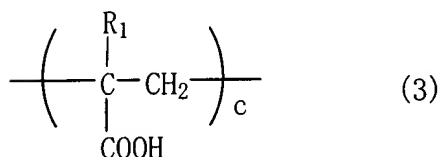


a structural unit represented by Formula (2)



wherein  $\text{R}_1$  is hydrogen or methyl,  $\text{R}_2$  is  $\text{C}_1$  to  $\text{C}_6$  linear or branched unsubstituted alkyl or  $\text{C}_1$  to  $\text{C}_6$  linear or branched substituted alkyl; and

a structural unit represented by Formula (3)



wherein  $\text{R}_1$  is hydrogen or methyl; the molar proportions of the structural units being  $a=0.05$  to  $0.7$ ,  $b=0.15$  to  $0.8$  and  $c=0.01$  to  $0.5$  and the sum of  $a$ ,  $b$  and  $c$  being 1.

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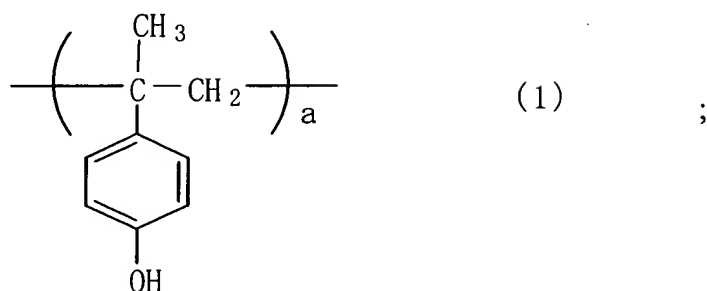
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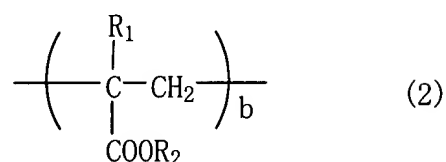
**Claim 21 (Previously Presented):** A method according Claim 13, wherein the positive thermosensitive paste composition comprises a thermosensitive resin, an ether linkage-containing olefinic unsaturated compound, a thermal acid generator and a conductive powder, the thermosensitive resin being a copolymer having:



a structural unit represented by Formula (1)

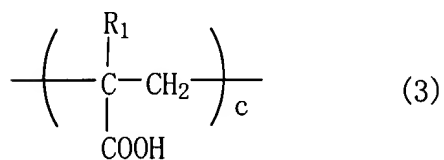


a structural unit represented by Formula (2)



wherein R<sub>1</sub> is hydrogen or methyl, R<sub>2</sub> is C<sub>1</sub> to C<sub>6</sub> linear or branched unsubstituted alkyl or C<sub>1</sub> to C<sub>6</sub> linear or branched substituted alkyl; and

a structural unit represented by Formula (3)



wherein R<sub>1</sub> is hydrogen or methyl; the molar proportions of the structural units being a=0.05 to 0.7, b=0.15 to 0.8 and c=0.01 to 0.5 and the sum of a, b and c being 1.